

---

STATUS OF THE NEUTRON CROSS SECTION STANDARDS DATABASE

Franz-Josef Hambsch<sup>1</sup>, Allan D. Carlson<sup>2</sup>, Herbert Vonach<sup>3</sup>

<sup>1</sup> *EC-JRC-Institute for Reference Materials and Measurements, Retieseweg, B-2440 Geel, Belgium*

<sup>2</sup> *National Institute of Standards and Technology, Gaithersburg, MD-20899, USA*

<sup>3</sup> *Institut für Isotopenforschung und Kernphysik der Universität Wien, Boltzmannngasse 3, A-1090 Wien, Austria*

---

The International Atomic Energy Agency (IAEA) has commenced with a Co-ordinated Research Project (CRP) on improving the standard cross sections, with the focus on the light elements. This has to be seen in view of the upcoming new evaluation of the ENDF/B-VII. Since most neutron cross section measurements are made relative to neutron cross section standards, the standards evaluation is of crucial importance. The reactions contained in the standards data base are:  $\text{H}(n,n)$ ,  ${}^3\text{He}(n,p)$ ,  ${}^6\text{Li}(n,t)$ ,  ${}^{10}\text{B}(n,\alpha)$ ,  ${}^{10}\text{B}(n,\alpha\gamma)$ ,  $\text{C}(n,n)$ ,  $\text{Au}(n,\gamma)$  and  ${}^{235}\text{U}(n,f)$ . Other reactions including the  ${}^{238}\text{U}(n,f)$  cross section were added to the NEANDC/INDC Nuclear Standards file. These standards received international acceptance to ensure that all evaluation projects use the same set of standards. The last complete evaluation of the standards file, however, dates back almost 20 years. In the meantime quite a number of new and improved measurements have occurred for the cross section standards. International efforts within the mentioned CRP are presently underway to update the experimental data base and to improve the evaluation process. Due to the need for high energy standards, the energy range is extended to 200 MeV for some of the cross section standards. The status of the work on this evaluation will be discussed.